IT HAD TO HAPPEN!
THE COMPUTER OF THE DECADE
DICK SMITH SYSTEM 80

third generation computer system

NOW AVAILABLE IN NEW ZEALAND!

- Z-80 microprocessor
- Takes two cassette players — one is built in!
- RF output direct to TV set (video output as well)
- 12K Tandy compatible BASIC
- 16 lines of 64 or 32 characters
- 128 x 48 graphics matrix
- Expansion with S-100 system
- Dick Smith backup

SAVE NEAR 20% — ON TANDY — AND RUN MOST OF THEIR PROGRAMS

NEW ZEALAND'S BEST VALUE COMPUTER

The design philosophy of the Dick Smith System-80 Personal Computer is for a general purpose computer system which features maximum expansion capability and versatility whilst retaining the lowest possible price.

The System-80 (X-4005) contains a Z-80 Central Processor Unit, a keyboard, cassette interface, with its own built-in cassette recorder, a video modulator so that you can use a video monitor or your own standard TV set.

The Dick Smith System-80 Computer contains 16K of user RAM memory.

This hardware configuration is very powerful as it means that the complete working computer system is contained in one box. The only other item required is a standard TV set or a Video Monitor.

To complement this 'hardware', the System-80 has a powerful resident EXTENDED BASIC Interpreter which is compatible with that of Tandy TRS-80 Level-II BASIC. This, of course, means that you can use most of the multitude of programs that have been written for the TRS-80 Computer since it was first released several years ago. So now you have a state-of-the-art computer with a lot of software ready and waiting.

We said earlier that the System-80 was expandable. This is vital if you are to use your computer and treat it as an investment for years to come.

Rather than follow an obscure expansion system, we have chosen the world standard S-100 Bus system for the Dick Smith System-80. There is an edge connector on the back panel of the System-80 to which the S-100 Expansion Unit (X-4010) connects. The Expansion Unit provides a Centronics-type parallel printer interface, an RS-232C serial communications interface, and a floppy-disk controller capable of controlling up to four single density 5¼-in disk drives (such as our Pertec drives, X-3230). The Expander Unit also provides the S-100 sockets to allow you to plug in many of the multitude of S-100 cards which are available from over 200 manufacturers around the world. The sort of things you might want to add to your System-80 could be:

A memory card – to expand your system up to 48K user RAM.
Device controllers – to turn on and off the equipment in your home or office.
Music Synthesisers – you can compose music even if you can't play an instrument.
Voice Synthesisers – talking computers are now a reality!
Real-time Clocks – so that your System-80 knows what time it is!

Let us now take a closer look at the 'Level II' BASIC in the Dick Smith System-80. This BASIC can be divided into eight sections:

1. ACTIVE COMMANDS
2. TEXT EDITING
3. BASIC STATEMENTS
4. ARRAYS
5. STRINGS
6. ARITHMETIC FUNCTIONS
7. GRAPHICS
8. SPECIAL FEATURES.

In the Dick Smith System-80 Computer there are four different operating levels:

1: Active command level; In this level, the computer responds to commands as soon as they are entered (by pressing the new line key). Whenever the >__ signs are on the display, the user is in the active command level.

2: The Program Execution Level: This level is entered by typing RUN, causing the BASIC program in the memory to be executed. On entering this level all variables are set to null (empty) before execution starts.

3: Text editing Level: This level allows the user to modify, add or delete characters and lines of the Basic Program source resident in the memory. The most significant feature of this level is that the user can change any portion of a line without having to re-type the entire line.

4: Monitor Level: This level permits the user to load machine-language programs into the memory. This may be a machine language executable programs or even data files. Such 'object' files can also be accessed by BASIC programs.

As you can see, this makes for a very powerful personal computer. When you consider the price, it just cannot be beaten for value!

Cat X-4005 16k System-80 computer . . . . .NZ$1199.00 inc tax

VIDEO MONITOR AVAILABLE AS OPTIONAL EXTRA

NOTE: To the best of our knowledge, all TRS-80 software written wholly in BASIC language will run normally on the System 80. Most programs written in machine language will also run normally, but a small proportion will not do so without modification. For advice about specific programs please ask our store staff.

The Dick Smith System-80 Personal Computer accepts variable names which can be longer than two characters, however, only the first two characters will be recognised as the variable name by the computer. Variables must start with a letter and the second character may be a letter or a digit. Therefore variables may be from AA to ZZ and A0 to Z9. Please note however that when using long variable names you must ensure that they do not contain 'reserved words'. These reserved words are ones like 'GOTO' 'PRINT', 'RUN' etc.

There are four kinds of variables: Integer, Single precision floating point Double precision floating point, String. These are distinguished by appending one of the following special characters, respectively: %, !, #, $.

The following operators are used by the System-80:
+ Addition
– Subtraction
* Multiplication
/ Division
ESC Exponentiation
< Less than
> Greater than
<> Not equal
<= Less than or equal to
>= Greater than or equal to
= Equal to
In addition the System-80 recognises three logical operators:
AND , OR , NOT
and string operators for comparing the precedence of strings.

1. ACTIVE COMMANDS.

#		
1	AUTO	Automatic line numbering
2	CLEAR	Resets Variables to zero and sets aside string space
3	CLOAD	Loads a program of specified filename from specified tape unit.
4	CLOAD?	Verifies that the loaded program is correct.
5	CONT	Continue execution after stopping.
6	CSAVE	Saves BASIC program to tape.
7	DELETE	Deletes line or lines specified from program.
8	EDIT	Puts System-80 in EDIT mode to correct part of a line
9	LIST	Lists the program lines specified.
10	NEW	Clears the current program from memory.
11	RUN	Starts program execution
12	SYSTEM	Puts System-80 in Monitor mode
13	TROFF	Turns off the trace diagnostic
14	TRON	Turns on the trace diagnostic
15	LPRINT	Prints a file to the printer
16	LLIST	Lists the program to the printer.

2. TEXT EDITING.
By typing in EDIT 100, for example, the computer will prepare to edit line 100. You can:

1. Insert text
2. Delete from end of line
3. Delete from cursor to end of line and insert text.
4. Add to end of line
5. List line
6. Quit and restart edit
7. Change characters

3: BASIC STATEMENTS.

1.	PRINT	18.	STOP
2.	PRINT@	19.	GOTO
3.	PRINT USING	20.	GOSUB
4.	INPUT	21.	RETURN
5.	DATA	22.	ON GOTO
6.	READ	23.	ON GOSUB
7.	RESTORE	24.	FOR TO STEP
8.	PRINT #	25.	NEXT
9.	INPUT #	26.	RUN
10.	DEFINT	27.	ON ERROR GOTO
11.	DEFSNG	28.	ERROR
12.	DEFDBL	29.	RESUME
13.	DEFSTR	30.	REM
14.	CLEAR	31.	IF
15.	DIM	32.	THEN
16.	LET	33.	ELSE
17.	END	34.	INKEY$

4. ARRAYS.
The Dick Smith System-80 Computer is capable of accepting both numeric and string arrays. An array is simply a list or table of data which is set out in the memory of the computer for easy access to programs. The dimension of an array is simply the number of ways it is expanded from a single value. Thus a table of data with eight columns and eight rows is a two dimensional array containing sixty-four separate variables. In the computer these are represented with subscripts; e.g. A(1,1), A(1,2), A(1,3). . . . . A(8,8) These arrays are set up in the computer using the DIM statement.

5: STRINGS.
The System-80 uses two kinds of strings:
1: Constants – these are always represented within quotes inside the program; eg 'yes'
2: Variables – eg. A$
As you can see, a string is simply a 'string of characters'; they can, of course, be letters, numbers, or special punctuation and mathematical characters. The computer can add, divide, compare and create strings as you desire. The functions it uses are:
1. ASC
2. CHR$
3. LEFT$
4. RIGHT$
5. LEN
6. MID$
7. STR$
8. STRING$
9. VAL

6. ARITHMETIC FUNCTIONS
The System-80 features sixteen built-in arithmetic functions:

1.	ABS	9.	INT
2.	ATN	10.	LOG
3.	CDBL	11.	RANDOM
4.	CINT	12.	RND
5.	COS	13.	SGN
6.	CSNG	14.	SIN
7.	EXP	15.	SQR
8.	FIX	16.	TAN

7: GRAPHICS.
The graphics of the System-80 are arranged as 48 lines of 128 columns. The graphics commands available to us are as follows:
1. SET
2. RESET
3. CLS
4. POINT

8: SPECIAL FEATURES.
The following special features are implemented in the System-80:

1. INP   This command will input the 8-bit byte from the port specified.
2. OUT   This command outputs a byte to the port specified.
3. PEEK   This command returns the decimal value of the memory location specified.
4. POKE   This command lets you insert a value into the specified location in memory.
5. POS   This command returns a number from 0 to 63 indicating the current cursor position on the display line.
6. MEM   This command returns the number of unused and unprotected bytes in memory.
7. USR   This command calls a machine language subroutine and passes the argument to the subroutine.
8. VARPTR This command returns an address value for the operand, a variable name.

9. ERROR CODES.
To assist in trapping errors in your programs, the System-80 has twenty two error codes:

ERROR CODE	ABBREVIATION	ERROR
1	NF	NEXT without FOR
2	SN	Syntax error
3	RG	RETURN without GOSUB
4	OD	Out of data
5	FC	Illegal function call
6	OV	Overflow
7	OM	Out of memory
8	UL	Undefined line
9	BS	Subscript out of range
10	DD	Redimensioned array
11	/0	Division by 0
12	ID	Illegal direct command
13	TM	Type Mismatch
14	OS	Out of string space
15	LS	String too long
16	ST	String formula too complex
17	CN	Can't continue
18	NR	No resume
19	RW	RESUME without error
20	UE	Unprintable error
21	MO	Missing operand
22	FD	Bad file data